The Nature Conservancy
SAVING THE LAST GREAT PLACES ON EARTH

California Regional Office
201 Mission Street, Fourth Floor
San Francisco, CA 94105

tel [415] 777-0487
fax [415] 777-0244

nature.org
nature.org/california

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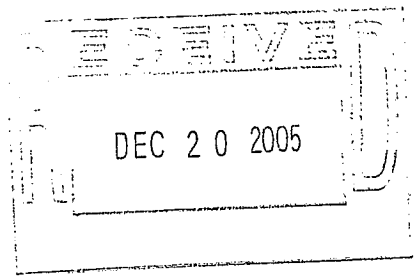

Dan Leavitt
Deputy Director
California High Speed Rail Authority
925 L Street, Suite 1425
Sacramento, CA 95814

Re: Comments on the scope and content of the Program EIR/EIS for a Bay Area to Central Valley High-Speed Train

Dear Mr. Leavitt,

These comments on the scope and content of the Program EIR/EIS for a Bay Area to Central Valley High-Speed Train are submitted by The Nature Conservancy (Conservancy), a global conservation organization with approximately one million members. Since 1951, TNC has protected, with partners, over 117 million acres around the world. Our mission is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive.

In pursuing this mission, the Conservancy relies on a science-based approach both to identifying key threats to important natural communities and to developing effective strategies for their conservation. Since its inception, the Conservancy's primary emphasis has been on on-the-ground projects that produce tangible results. In that context, we have a long track record of working with diverse partners to achieve innovative, cost-effective, ecologically sound outcomes in the context of ongoing economic activity.

The Conservancy would like to thank the California High Speed Rail Authority (Authority) and staff for their thorough response to our comments on the Draft EIR/EIS for the proposed California High-Speed Train (HST) system. The Conservancy was pleased to see many of our comments addressed in the Final EIR/EIS and we look forward to the opportunity to work with the California High Speed Rail Authority and staff on the refinement of a Program EIR/S for the Bay Area to Central Valley segment of the HST. The Conservancy believes that a broad and thorough review of the broad corridor between the Bay Area and Central Valley, as identified in the Final EIR/S, is essential for the Authority to meet legal obligations, as stated under the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., the CEQA Guidelines, California Code of Regulations, title 14, section 15000 et seq. (CEQA Guidelines), and the National Environmental Policy Act (NEPA), 42 U.S.C 4321; 40 C.F.R. 1500.1.

In their review of the Bay Area to Central Valley segment of the HST, the Conservancy urges the Authority and staff to thoroughly and equitably assess each alignment option, including the Altamont Pass (I-580) and the Pacheco Pass (SR-152). Further, the Conservancy encourages the Authority and staff to ensure the Program EIR/EIS includes the best available information on potential impacts to California's unique biological resources and associated mitigation strategies for each potential impact. Detailed comments follow.

I. Existing and Priority Biodiversity Conservation Areas in the Northern Mountain Crossing Corridor

Through our practice of *Conservation by Design*, The Nature Conservancy systematically identifies and prioritizes areas containing the most irreplaceable natural resources and representative ecosystem types within an *ecoregion*. An ecoregion is an area with similar climatic, physiographic and biological communities. These priority areas are called our *portfolio conservation areas* and represent the framework and context for our conservation action.

Each portfolio conservation area is selected for the habitat that it contains for *conservation targets*- species, communities or ecological systems. After identification of these areas, we define our project areas in an ecoregion by integrating conservation opportunities with biodiversity value and the status of threats to targets. Project areas, or large, functional landscapes, are the predominant scale of our conservation work and are the organizing geography for our investment in land and water conservation.

Construction and operation of a HST system would significantly and detrimentally impact natural resources throughout the state, particularly in areas of high ecosystem value, as well as areas where considerable public investments have been made to protect and manage key examples of our state's natural heritage. The Conservancy was pleased to see that Henry Coe State Park and the adjacent Orestimba Wilderness Area would not be directly impacted by any of the proposed HST alignment options for the Northern Mountain Crossing. However, a number of other priority conservation areas *are* bisected by the proposed alignment options. Two of these potentially affected areas are described below.

Profile Area: Diablo Mountain Range

The Conservancy's Mount Hamilton project area in Diablo Range of Central California is an intact landscape of oak woodlands, Central California sycamore alluvial woodlands, stream-fed canyons and pine-topped ridges. The project area comprises 1.2 million acres (1,875 square miles), and, to date, the Mount Hamilton Project has protected roughly 81,000 acres through acquisition or easement. These lands provide habitat protection for the San Joaquin kit fox (*Vulpes macrotis mutica*), which is federally listed as endangered and state listed as threatened, the federally threatened California red-legged frog (*Rana aurora draytonii*), and the proposed federally threatened California tiger salamander (*Ambystoma californiense)* that are known to reside in and migrate through the area. Protection of land along the eastern side of the Diablo Range was sought in part to protect the kit fox migration route that connects sub-populations in the north with the core Ciervo/Panoche population.

The construction and operation of a HST system through this area would irreparably damage these unique populations of native species and ecological functions by increasing habitat fragmentation, disrupting aquatic systems, and reducing habitat quality for many species due to noise, light and vibration. It is also likely that there would be increased pressure for a highway and associated infrastructure through the heart of the Diablo Range following completion of the HST system to provide increased access to San Jose from the relatively less expensive homes in the Central Valley.

Profile Area: Grasslands Ecological Area

The Grasslands Ecological Area (GEA) represents significant public investment in a priority conservation area in the proposed Bay Area to Central Valley HST scoping area. Encompassing approximately 180,000 acres, the GEA is the largest wetland complex in California and contains the largest block of contiguous wetlands remaining in the Central Valley.[1] The GEA is designated by the U.S. Fish & Wildlife Service as an area for priority purchase of public easements for wetland preservation and enhancement. The GEA

[1] Grasslands Water District, Land Use and Economics Study: Grasslands Ecological Area (July 2001).

includes federal wildlife refuges, a state park, state wildlife management areas and the largest block of privately managed wetlands in the state. The GEA also includes a large and growing portfolio of federal, state and private conservation easements. Through 1998, conservation easements had been acquired on over 64,000 acres at a total cost of over $28 million.

The GEA is of considerable importance because it preserves a variety of habitats important to the maintenance of biodiversity on a local, regional, national and international scale. It has been estimated that 30 percent of the Central Valley migratory population of waterfowl use this area for winter foraging.[2] The GEA is a major wintering ground for migratory waterfowl and shorebirds of the Pacific Flyway and the Western Hemisphere Shorebird Reserve Network has designated the GEA as one of only 22 international shorebird reserves in the world.[3] Over a million waterfowl are regularly found in the GEA during the winter months. The GEA also provides habitat for more than 550 species of plants and animals, including 47 plant and animal species that are endangered, threatened or candidate species under state or federal law.

A Pacheco Pass Alignment, as identified in the statewide HST Program EIR/S, bisects the Grasslands Ecological Area (GEA) as it passes north of Los Banos. Similar to the potential impacts on the Diablo Mountain Range, outlined above, a HST alignment bisecting the GEA would have tremendous negative consequences for the area's rich biological diversity.

II. Analysis of Potential Impacts to Natural Resources in the Northern Mountain Crossing Corridor

The Nature Conservancy appreciates that a program-level EIR/S is just the first investigative tier in a large project such as the statewide HST project, and we understand that alignment decisions must be made on a considerable number of unknowns and unpredictable factors. However, under both CEQA and NEPA, an EIR/S must provide a comprehensive description of all of the related aspects of a project. A project description for an EIR must contain a "general description of the project's technical, economic, and environmental characteristics, considering the principal engineering proposals if any and supporting public service facilities."[4] Therefore, the Conservancy expects that as the Authority and staff prepare a Program EIR/S for the Northern Mountain Crossing, they will use appropriate, accurate and current data; choose the right type of analysis for each resource in question; and consider the full range of direct, indirect and cumulative effects of each proposed alignment option.

A. Use of best available data

The Conservancy believes that in order to adequately determine the impact of each of the proposed alignments, the Program EIR/S is required under CEQA and NEPA to use the most current and appropriate data available. The reliance on data sets such as the California Natural Diversity Database (CNDDB) to determine the true extent of direct and cumulative impacts is insufficient for many wildlife and plant species. This is especially true in areas that are typically undersampled in the database due to remoteness or lack of publicly accessible land. The CNDDB, and any database of observational data, is going to be seriously limited for analyzing impacts on less widely distributed species, as it documents only occupied habitat, not potential habitat. In addition, CNDDB only maps occupied habitat where somebody has surveyed and sent the survey results into the program. This is likely a small percentage of the full distribution of many species. For many listed species, there are other key sources of data that were only partially used in the DEIR/S including Natural Community Conservation Plan (NCCP), Habitat Conservation Plan (HCP), Multiple Species Conservation Plan (MSHCP) reserve designations,

[2] U.S. Bureau of Reclamation, Final NEPA EA, Refuge Water Supply Long-Term Water Supply Agreements (January 2002)
[3] Fredrickson, Leigh H. and Laubhan, Murray K, Land Use Impacts and Habitat Preservation in the Grasslands of Western Merced County, CA (February 1995)
[4] CEQA Guidelines Section 15124(c)

designated critical habitat, recovery plans, and habitat suitability models like the GAP analysis project predicted distribution layers generated from the California Wildlife Habitat Relationship (WHR) models.

Use of suitable wildlife habitat models (e.g. WHR) and data created to represent other high quality habitat (e.g. via critical habitat designation or NCCPs) to analyze the effect of the proposed action on sensitive wildlife habitat and movement linkages would facilitate more meaningful interpretation of direct and cumulative impacts. For example, the Program EIR/S must quantify the percent of suitable habitat that is lost, fragmented and degraded as a result of the construction and maintenance across the full distributional range of the species, factoring in the other threats to species viability. This is the minimum necessary to characterize the cumulative impact on rare or sensitive wildlife. The Program EIR/S also needs to consider not just the amount of lost habitat within the narrow study area, but the change in spatial configuration of habitat and the loss of effective habitat as a result of factors such as noise, light and associated maintenance infrastructure. Without such an analysis, decision makers cannot make a determination of which alternatives are the least environmentally damaging.

B. Consistent technical evaluations of each alignment alternative

The Conservancy believes that CEQA and NEPA mandate that information for each alternative be analyzed consistently at the same level of detail with information presented in a consistent format. In order for decision-makers to understand the full range of impacts and make an educated decision on the preferred Northern Mountain Crossing Alignment, each alignment alternative, as well as each environmental impact, must be presented in a consistent and comprehensive manner. A consistent set of data and a template for the formatting and presentation of information on impacts should be standardized in the Program EIR/S. Furthermore, it is critical that the same map data and scale be used on a consistent set of maps for each alignment alternative.

C. Resource impacts to be analyzed in the Program EIR/S

Wildlife Habitat Fragmentation

One of the most significant long-term ecological impacts of the HST project will be the fragmentation of wildlife habitat and isolation of species. Over time, the negative effect on population viability from fragmentation of habitat could be extreme for some wide-ranging or migratory species, such as pronghorn, mountain lion, and San Joaquin kit fox. The isolating effect will be greatest in areas where the rail corridor bisects large, relatively intact landscapes, like the Diablo Range in the Bay Area. Given how little intact low-elevation habitat remains in California for wide-ranging species, it is scientifically unjustifiable to consider further fragmentation when other alternatives exist for alignments in and around existing developed areas.

At a finer scale, the issue of fencing is an extremely important aspect of HST design, as it may block access to critical habitats necessary during a portion of a species life cycle (e.g. wetlands for amphibians). Further habitat connectivity modeling and field studies including: analysis of suitable habitat that would be fragmented by the rail corridor, population locations and recovery plan demographic data, are necessary before the impact of a fenced rail corridor can be adequately assessed. Additionally, the following data must be included in the Program EIR/S if one is to understand the full range of habitat fragmentation impacts: how much of the route will be fenced, which species will likely be affected, whether pilings and support beams will also be fenced.

Ecosystem Functioning

Processes such as nutrient flow, natural disturbance, pollination, predation, genetic interchange, surface and groundwater flow all interact to sustain communities of species over time. While little spatial data exists to characterize the dynamics of these processes, published studies and experts should be used to assess the impact of a significant fragmenting feature such as a rail corridor. The spatial scale at which ecological processes operate is widely variable and any interpretation of the impact of HST on biological

resources needs to factor in the effective "area of influence" for the resources in question. For example, a wetland can be filled and impacted directly by HST if it overlaps with the rail line, but a wetland can also be affected miles away from the rail line if upstream changes in surface and groundwater flow result from HST construction and operation.

Key ecosystem issues that need to be analyzed in a Program EIR/S for the Northern Mountain Crossing include:

1. How the presence of the HST system will affect the movement and management of fire in fire-adapted ecosystems and on public land
2. How the relationship between wetlands and groundwater would be affected by HST
3. What vegetation communities will be affected by changes in microclimate, soil moisture, and seed and nutrient sources resulting from altered hydrologic and wind regimes, soil compaction and loss of canopy vegetation in forests and riparian areas in the HST right-of-way
4. What chemicals will be used during construction, operation and maintenance of the HST and how these may affect biological resources through soil and water pollution
5. How the rail corridor affects riparian vegetation and associated fauna near streams and rivers
6. How HST construction, operation and maintenance will affect sediment deposition and water temperature, and how those changes will affect salmon and steelhead populations

Invasive species

One of the primary global threats to biodiversity is the spread of non-native, invasive species into ecosystems. Given the seriousness of this threat, a discussion of the potential spread of invasive species by HST construction and operation is essential, particularly in remote areas without any major human infrastructure (e.g. Diablo Range). Extensive research in road right-of-ways shows that opportunistic invasive species often out-compete native plants, following soil and canopy disturbance. These disturbances increase rates of establishment due to changes in light and moisture availability. Railroads, like roads, are an extremely efficient distribution mechanism for invasive species, and seeds may be transported on construction and maintenance equipment, and possibly trains themselves. Even at the Program-level, an EIR/S must consider the current distribution of invasive species along each proposed alignment, and the ecological effect the spread of these species in terrestrial and aquatic ecosystems would have on native biodiversity.

Noise, vibration and light effects on wildlife

In numerous studies along roads, birds and mammals show reduced breeding success, changes in movement patterns and altered behavior along roadways. The primary factors related to noise impacts are the amount of traffic and the presence of mitigating factors such as barrier walls. Assuming that a HST will produce noise that may affect wildlife in the same way that cars on highways affect wildlife, the Program EIR/S must predict and compare the increase in noise produced by each proposed HST corridor. Additionally, increases in light at night and vibration reduce habitat quality for many species including waterfowl, amphibians, and nocturnal mammals. Therefore, these issues must be analyzed in a format similar to the comparison of noise effects at each alignment option.

D. Construction activities to be analyzed in the Program EIR/S

While the Conservancy recognizes that many construction activities and techniques will be site-specific in nature, it is our feeling that at the Northern Mountain Crossing alignment-level, the Program EIR/S must thoroughly analyze the likely construction techniques to be used on each alignment alternative, as well each technique's respective impact on the surrounding natural resources.

Construction Activities for Tunneling

It is likely that construction-related environmental impacts could be as, or more, significant than operational impacts from a HST especially for areas that would require new track. The Program EIR/S

must provide details on the timing, duration, and engineering for each Northern Mountain alignment alternative. Specific issues related to tunneling that we would like to see addressed in the EIR/S include:

1. Water use for tunneling and impacts on water quality and groundwater flow
   The Statewide Final EIR/S states: "Shallow groundwater at potential tunneling sites in the mountain regions (Diablo Range and Pacheco Pass) could be affected by dewatering that in turn could affect groundwater levels," (DEIR/S at 3.14-12) and also:

   > As with the Modal Alternative, potential direct impacts on groundwater resources from the HST alternative would be limited to infrequent shallow groundwater occurrence where dewatering may be necessary during construction of at- and above-grade structures (e.g., support columns) and for tunneling portals." (DEIR/S at 3.14-14)

   Therefore, it is essential that information be provided as to the amount of water to be used for tunneling, where it would be diverted from, and how its disposal would impact aquatic biological resources.

2. Tunnel effects on groundwater flow
   Tunneling effects on groundwater flow must be addressed as it will indirectly and cumulatively impact wetlands, vernal pools, surface water, and other aquatic ecosystems including threatened, endangered, and sensitive species.

3. Disposal of removed material and its impact on biological resources
   The amount of dirt and rock that would need to be removed during the tunneling process is massive, and therefore must be described in terms of how much material would be disposed of and how this will affect terrestrial and aquatic biological resources.

4. Location and frequency of surface boring holes
   Presumably, there will be some pre-excavation investigation of subsurface geologic conditions using boring machines from the surface. The Program EIR/S must include information about how these operate, what ground-level disturbance is required, and how the machines will get into and move around the remote and extremely rugged backcountry of the Diablo Range. Furthermore, detailed information must be presented on what alternative construction techniques might be used in areas where the preferred technique is not plausible, and how these additional techniques might affect biological resources.

Construction Activities for Aerial Structures
Like tunneling, use of aerial structures will likely be cited in the EIR/S as a way to avoid biological impacts, particularly to aquatic systems. Each such citation must be accompanied by a description or analysis of the impacts stemming from the construction and use of these structures, as well as mitigation strategies that will be implemented to relieve impacts on natural resources. Furthermore, normalized criteria should be incorporated to determine which surface water bodies would be spanned with aerial structures and which would be filled, diverted or run through culverts.

Construction Activities to Upgrade Existing Rail for HST
Impacts along parts of the HST system that use existing rail lines may have minimal impacts because a broader footprint is not required for HST operation. However, there must be some description of how existing rail lines will be upgraded to meet HST requirements. These details likely figure into the overall cumulative impact on biological resources and cannot be omitted from a Program EIR/S.

Infrastructure Maintenance Activities

Infrastructure maintenance activities will undoubtedly be part of HST system function and the impact of these regular activities must be included in a Program EIR/S. Activities and impacts that must be analyzed include, but are not limited to: access roads that will be built and maintained for HST system access, the level of vegetation management that would be necessary to keep rights-of-way clear in natural areas, and the herbicides that would be used to manage vegetation.

E. Analysis of cumulative impacts and growth inducement

The Conservancy believes that both NEPA and CEQA mandate that cumulative impacts be assessed within a Program EIR/S, despite the magnitude of such a project. An analysis of cumulative impacts must quantify all direct, indirect, and cumulative impacts to natural resources, factoring in the full range of other threats posed to species and community viability by other transportation projects across the range of the species at the scale of the whole HST system. Furthermore, the Program EIR/S should include a description of which specific biological resources are most at risk and what mitigation strategies will be used to avoid cumulative impacts to those resources identified.

The potential indirect and cumulative effects from growth inducement resulting from HST construction must also be analyzed in a Program EIR/S for the Northern Mountain Crossing. The increased commuting mobility that HST will enable will likely catalyze significant growth and expansion of the developed footprint for many cities and towns, particularly in the Central Valley. The Conservancy is pleased that a station location in Los Banos will no longer be considered for the HST system, however, a HST corridor through the Diablo Range may lead to increased pressure for a highway and associated infrastructure to provide increased access to San Jose from the relatively less expensive homes in the Central Valley. The Program EIR/S must analyze the potential impact projected growth in this area, as well as others, will have on listed species habitat, wildlife movement and water resources.

III. Discussion of Mitigation Alternatives

For each Northern Mountain Crossing alignment option, feasible mitigation measures must be identified and a detailed analysis of these mitigation measures provided. It is not appropriate to make an alignment choice based on the possibility that significant impacts to biological resources may potentially be avoided by as yet undetermined design features and mitigation. Mitigation options, such as overpasses and tunneling, may prove to be infeasible in areas not thoroughly surveyed.[5]

In addition, the cost of proposed mitigation options should be factored into the overall comparison and ultimate selection of a preferred alignment, especially considering the fact that all of the proposed routes traverse areas with high resource and land values. While it may be impossible at this stage to quantify the full cost of mitigation along all proposed alignment alternatives, specifics on the cost, feasibility and likelihood of success are needed, especially for wetland mitigation and construction of wildlife underpasses and overpasses.

Finally, the Project EIR/S should also analyze the "net benefit" mitigation options that could opportunistically coincide with the construction of a HST system. In a project this massive in scope, there will undoubtedly be opportunities to improve wildlife habitat connectivity at existing chokepoints, and improve aquatic habitat connectivity for migratory fish and restore a functional tidal influence for coastal lagoons and wetlands. These actions should be considered mitigation options that construction of HST would enable and should be identified early in the review process.

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[5] In a paper entitled, *Use of non-wildlife passages across a high speed railway by terrestrial vertebrates,* researchers in Spain found that many factors influenced the use of culverts and passageways including proximity to habitat, human disturbance and dimensions of the passages. They found that ungulates were not using the passages even though they are found throughout the area and that the railway was a movement barrier for these animals. In Rodriguez et al. (1996) *Use of non-wildlife passages across a high speed railway by terrestrial vertebrates.* Journal of Applied Ecology 33, 1527-1540.

IV. Conclusion

The Nature Conservancy appreciates the opportunity to provide comments on the scope and content of a Project EIR/EIS for the Northern Mountain Crossing alignment of the proposed statewide HST project. We recognize the considerable challenge of meeting the transportation needs of a growing California, while maintaining the natural values that make California exceptional. The Conservancy believes that we need to find creative solutions to these needs, and that the growth of our ecological infrastructure needs to run parallel to our expanding human infrastructure. Given the massive scope of this project and the significant commitment of financial resources to investigate the proposed plans, the public and decision-makers must be presented with a thorough and consistent analysis of the environmental impact of the project at each planning level. The Conservancy looks forward to the opportunity to work with the Authority and staff to ensure the Project EIR/S for the Northern Mountain Crossing takes into account both natural and economic resources that are essential to the vitality of California.

Thank you for considering our comments.

Respectfully,

Mark Burget
Executive Director
California Program